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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Uchida et al.
SERIAL NUMBER: 10/649,234 EXAMINER : Robert Clinton Hayes
FILING DATE: August 27, 2003 ART UNIT : 1649
FOR: ENRICHED CENTRAL NERVOUS SYSTEM STEM CELL AND
PROGENITOR CELL POPULATIONS, AND METHODS FOR
IDENTIFYING, ISOLATING AND ENRICHING FOR SUCH
POPULATIONS

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER


Transmitted herewith for filing in the present application are the following documents:

1. Supplemental Information Disclosure Statement (2 pages), in duplicate;
2. Modified Form 1449/PTO (4 pages), in duplicate;
3. Copies of Cited References: C4-61;
4. Check in the amount of \$180.00 (#23282); and
5. Return Postcard.

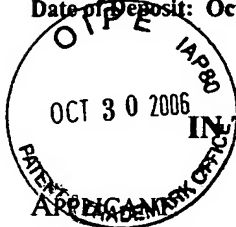
If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 542-6000, Boston, Massachusetts.

The Commissioner is authorized to charge any fees that may be due, or to credit any overpayment, to the undersigned's account, Deposit Account No. 50-0311 Ref. No. 17810-518. A duplicate copy of this transmittal letter is enclosed herewith.

Respectfully submitted,


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Uchida et al.

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicants hereby make of record the documents listed on the attached modified Form PTO-1449, as well as copies of the listed documents.

This Supplemental Information Disclosure Statement is being filed after the mailing date of the first Office Action, but before the mailing date of either a final action under 37 C.F.R. §1.113 or a Notice of Allowance under 37 C.F.R. §1.311. The fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) is enclosed.

It is respectfully requested that the Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application.

By submitting this Supplemental Information Disclosure Statement, the Applicants make no representation that: (1) a search has been performed, of the extent of any search performed, or that more relevant information does not exist; (2) the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b); and (3) the information cited in the Statement is, or is considered to be, in fact, prior art as defined by

35 U.S.C. §102.

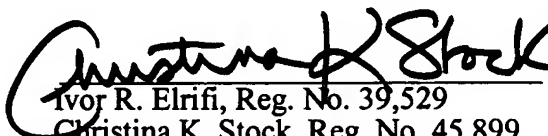
11/01/2006 MWOLDGE1 00000056 10649234

APPLICANT: Uchida et al.
U.S.S.N.: 10/649,234

Notwithstanding any statements by the Applicants, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information. An early and favorable action is hereby requested.

Please charge any fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 17810-518.

Respectfully submitted,



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Attorney Docket No.: 17810-518

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Modified Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number		10/649,234			
						Filing Date		August 27, 2003	
						First Named Inventor		Uchida	
						Group Art Unit		1649	
						Examiner Name		Robert Clinton Hayes	
						Attorney Docket Number		17810-518	
U.S. PATENT DOCUMENTS									
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate		
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FOREIGN PATENT DOCUMENTS									
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS									
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.							
	C4	Allendoerfer et al., "Forse-1, an antibody that labels regionally restricted subpopulations of progenitor cells in the embryonic central nervous system, recognizes the Le ^x carbohydrate on a proteoglycan and two glycolipid antigens", <i>Mol. Cell. Neurosci.</i> , 6:381-395 (1995)							
	C5	Allendoerfer et al., "Morphological domains of Lewis-X/FORSE-1 immunolabeling in the embryonic neural tube are due to developmental regulation of cell surface carbohydrate expression", <i>Dev. Biol.</i> , 211:208-219 (1999)							
	C6	Ashwell et al., "Developmental expression of the CD15 epitope in the hippocampus of the mouse", <i>Cell Tissue Res.</i> , 289(1):17-23 (1997)							
	C7	Bach et al., "Stem cells: the intestinal stem cell as a paradigm", <i>Carcinogenesis</i> , 21(3):469-476 (2000)							
	C8	Bartsch et al., "Distribution of the 3-fucosyl-N-acetyl-lactosamine (FAL) epitope in the adult mouse brain", <i>Cell Tissue Res.</i> , 263:353-366 (1991)							
	C9	Bird et al., "Oligosaccharides containing fucose linked $\alpha(1-3)$ and $\alpha(1-4)$ to N-acetylglucosamine cause decompaction of mouse morulae", <i>Dev. Biol.</i> , 104(2):449-460 (1984)							
	C10	Calaora et al., "mCD24 expression in the developing mouse brain and in zones of secondary neurogenesis in the adult", <i>Neuroscience</i> , 73(2):581-594 (1996)							

C11	Campos-Ortega, J.A., "Genetic mechanisms of early neurogenesis in drosophila melanogaster", <i>Mol. Neurobiol.</i> , 10:75-89 (1995)
C12	Cao et al., "Pluripotent stem cells engrafted into the normal or lesioned adult rat spinal cord are restricted to a glial lineage", <i>Exp. Neurol.</i> , 167(1):48-58 (2001)
C13	Chiasson et al., "Adult mammalian forebrain ependymal and subependymal cells demonstrate proliferative potential, but only subependymal cells have neural stem cell characteristics", <i>J. Neurosci.</i> , 19(11):462-4471 (1999)
C14	Davis et al., "A self-renewing multipotential stem cell in embryonic rat cerebral cortex", <i>Nature</i> , 372:263-266 (1994)
C15	Dodd et al., "Cell surface glycoconjugates and carbohydrate-binding proteins: possible recognition signals in sensory neurone development", <i>J. Exp. Biol.</i> , 124:225-238 (1986)
C16	Doetsch et al., "Subventricular zone astrocytes are neural stem cells in the adult mammalian brain", <i>Cell</i> , 97(6):703-716 (1999)
C17	Doetsch et al., "Regeneration of a germinal layer in the adult mammalian brain", <i>Proc. Natl. Acad. Sci. USA</i> , 96(20):11619-11624 (1999)
C18	Dvořák et al., "Embryoglycan ectodomains regulate biological activity of FGF-2 to embryonic stem cells", <i>J. Cell Sci.</i> , 111(19):2945-2952 (1998)
C19	Fox et al., "Immunohistochemical localization of the early embryonic antigen (SSEA-1) in postimplantation mouse embryos and fetal and adult tissues", <i>Dev. Biol.</i> , 83(2):391-398 (1981)
C20	Gage, F.H., "Mammalian neural stem cells", <i>Science</i> , 287:1433-1438 (2000)
C21	Gocht et al., "CD15-containing glycoconjugates in the central nervous system", <i>Histol. Histopathol.</i> , 11:1007-1028 (1996)
C22	Gomperts et al., "Interactions between primordial germ cells play a role in their migration in mouse embryos", <i>Development</i> , 120:135-141 (1994)
C23	Gooi et al., "Stage-specific embryonic antigen involves α 1-3 fucosylated type 2 blood group chains", <i>Nature</i> , 292:156-158 (1981)
C24	Gould et al., "Neurogenesis in the neocortex of adult primates", <i>Science</i> , 286:548-552 (1999)
C25	Gritti et al., "Multipotential stem cells from the adult mouse brain proliferate and self-renew in response to basic fibroblast growth factor", <i>J. Neurosci.</i> , 16(3):1091-1100 (1996)
C26	Gritti et al., "Multipotent neural stem cells reside into the rostral extension and olfactory bulb of adult rodents", <i>J. Neurosci.</i> , 22(2):437-445 (2002)
C27	Hakomori, S., "Le ^x and related structures as adhesion molecules", <i>Histochem. J.</i> , 24(11):771-776 (1992)
C28	Jessell et al., "Carbohydrates and carbohydrate-binding proteins in the nervous system", <i>Annu. Rev. Neurosci.</i> , 13:227-255 (1990)
C29	Jirmanova et al., "O-linked carbohydrates are required for FGF-2-mediated proliferation of mouse embryonic cells", <i>Int. J. Dev. Biol.</i> , 43(6):555-562 (1999)
C30	Johansson et al., "Identification of a neural stem cell in the adult mammalian central nervous system", <i>Cell</i> , 96(1):25-34 (1999)
C31	Jones et al., "Stem cell patterning and fate in human epidermis", <i>Cell</i> , 80(1):83-93 (1995)
C32	Kato et al., "Physiological degradation converts the soluble syndecan-1 ectodomain from an inhibitor to a potent activator of FGF-2", <i>Nat. Med.</i> , 4(6):691-697 (1998)

C33	Kawaguchi et al., "Nestin-EGFP transgenic mice: visualization of the self-renewal and multipotency of CNS stem cells", <i>Mol. Cell. Neurosci.</i> , 17(2):259-273 (2001)
C34	Kempermann et al., "Genetic influence on neurogenesis in the dentate gyrus of adult mice", <i>Proc. Natl. Acad. Sci. USA</i> , 94(19):10409-10414 (1997)
C35	Kondo et al., "Oligodendrocyte precursor cells reprogrammed to become multipotential CNS stem cells", <i>Science</i> , 289:1754-1757 (2000)
C36	Laywell et al., "Identification of a multipotent astrocytic stem cell in the immature and adult mouse brain", <i>Proc. Natl. Acad. Sci. USA</i> , 97(25):13883-13888 (2000)
C37	Lois et al., "Proliferating subventricular zone cells in the adult mammalian forebrain can differentiate into neurons and glia", <i>Proc. Natl. Acad. Sci. USA</i> , 90:2074-2077 (1993)
C38	Mai et al., "Demarcation of prosencephalic regions by CD15-positive radial glia", <i>Eur. J. Neurosci.</i> , 10(2):746-751 (1998)
C39	Marani et al., "A longitudinal band-pattern for the monoclonal human granulocyte antibody B _{4,3} in the cerebellar external granular layer of the immature rabbit", <i>Histochem.</i> , 78(2):157-161 (1983)
C40	Marani et al., "Stage specific embryonic carbohydrate surface antigens of primordial germ cells in mouse embryos: FAL (S.S.E.A.-1) and globoside (S.S.E.A.-3)", <i>Acta Morphol. Neerl.-Scand.</i> , 24(2):103-110 (1986)
C41	Marmur et al., "Isolation and developmental characterization of cerebral cortical multipotent progenitors", <i>Dev. Biol.</i> , 204:577-591 (1998)
C42	Milev et al., "The core protein of the chondroitin sulfate proteoglycan phosphacan is a high-affinity ligand of fibroblast growth factor-2 and potentiates its mitogenic activity", <i>J. Biol. Chem.</i> , 273(34):21439-21442 (1998)
C43	Morrison et al., "Regulatory mechanisms in stem cell biology", <i>Cell</i> , 88(3):287-298 (1997)
C44	Morrison et al., "Prospective identification, isolation by flow cytometry, and in vivo self-renewal of multipotent mammalian neural crest stem cells", <i>Cell</i> , 96(5):737-749 (1999)
C45	Morshead et al., "Neural stem cells in the adult mammalian forebrain: a relatively quiescent subpopulation of subependymal cells", <i>Neuron</i> , 13(5):1071-1082 (1994)
C46	Muramatsu, T., "Cell surface glycoproteins: biochemical, immunological and molecular biological studies", <i>Nagoya J. Med. Sci.</i> , 57:95-108 (1994)
C47	Nowakowski et al., "New neurons: extraordinary evidence or extraordinary conclusion?", <i>Science</i> , 288:771a-773a (2000)
C48	Palmer et al., "The adult rat hippocampus contains primordial neural stem cells", <i>Mol. Cell. Neurosci.</i> , 8(6):389-404 (1997)
C49	Palmer et al., "Vascular niche for adult hippocampal neurogenesis", <i>J. Comp. Neurol.</i> , 425(4):479-494 (2000)
C50	Reynolds et al., "Oligodendroglial progenitors labeled with the O4 antibody persist in the adult rat cerebral cortex in vivo", <i>J. Neurosci. Res.</i> , 47(5):455-470 (1997)
C51	Raynolds et al., "Generation of neurons and astrocytes from isolated cells of the adult mammalian central nervous system", <i>Science</i> , 255:1707-1710 (1992)

C52	Rietze et al., "Purification of a pluripotent neural stem cell from the adult mouse brain", <i>Nature</i> , 412:736-739 (2001)
C53	Sakakibara et al., "Mouse-musashi-1, a neural RNA-binding protein highly enriched in the mammalian CNS stem cell", <i>Dev. Biol.</i> , 176:230-242 (1996)
C54	Seaberg et al., "Adult rodent neurogenic regions: the ventricular subependyma contains neural stem cells, but the dentate gyrus contains restricted progenitors", <i>J. Neurosci.</i> , 22(5):1784-1793 (2002)
C55	Solter et al., "Monoclonal antibody defining a stage-specific mouse embryonic antigen (SSEA-1)", <i>Proc. Natl. Acad. Sci. USA</i> , 75(11):5565-5569 (1978)
C56	Suhonen et al., "Differentiation of adult hippocampus-derived progenitors into olfactory neurons in vivo", <i>Nature</i> , 383:624-627 (1996)
C57	Tole et al., "FORSE-1: a positionally regulated epitope in the developing rat central nervous system", <i>J. Neurosci.</i> , 15(2):957-969 (1995)
C58	Uchida et al., "Direct isolation of human central nervous system stem cells", <i>Proc. Natl. Acad. Sci. USA</i> , 97(26):14720-14725 (2000)
C59	Weiss et al., "Multipotent CNS stem cells are present in the adult mammalian spinal cord and ventricular neuroaxis", <i>J. Neurosci.</i> , 16(23):7599-7609 (1996)
C60	Winkler et al., "Incorporation and glial differentiation of mouse EGF-responsive neural progenitor cells after transplantation into the embryonic rat brain", <i>Mol. Cell. Neurosci.</i> , 11(3):99-116 (1998)
C61	Yamamoto et al., "Fucose-containing glycolipids are stage- and region-specific antigens in developing embryonic brain of rodents", <i>Proc. Natl. Acad. Sci. USA</i> , 82:3045-3049 (1985)

* a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. _____, filed _____, and relied upon for an earlier filing date under 35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

Examiner Signature		Date Considered	
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